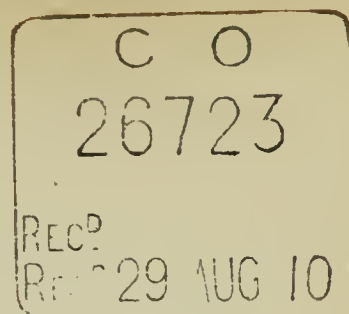


Federated Malay States.



THE MEDICAL REPORT

FOR THE

STATE OF SELANGOR,

1909.

RETURN OF THE STATISTICS OF POPULATION OF SELANGOR
FOR THE YEAR 1909.

	Europeans.	Eurasians.	Chinese.	Malays.	Tamils.	Others.	Total.
Number of Inhabitants on the 31st December, 1908 ...	4,874		189,138	69,571	72,615	4,982	341,180
„ Births during the year 1909	76		898	1,883	603	521	3,981
„ Deaths „ „	37		4,861	1,473	2,463	472	9,306
„ Immigrants „ „	2,008		25,675	9,670	26,218	307	63,878
„ Emigrants „ „	1,275		23,058	7,774	12,609	35	44,751
„ Inhabitants on the 31st December, 1909 ...	5,646		187,792	71,877	84,364	5,303	354,982
Increase	772		...	2,306	11,749	321	15,148
Decrease ... ..	...		1,346	...	...	...	1,346

METEOROLOGICAL RETURN OF KUALA LUMPUR FOR THE YEAR 1909.

			Temperature.					Rainfall.*		Winds.		
			Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean.	Amount in Inches.	Degree of Humidity.	General Direction.	Average Force.
January	146.3	52.5	89.1	71.1	18.0	80.8	8.73	78	Calm	Not recorded
February	...	...	141.0	52.6	89.3	71.7	17.6	80.2	12.09	80	S.W.
March	...	...	143.2	52.4	90.0	72.0	18.0	80.6	14.03	79	S.S.W.
April	...	...	147.3	51.7	89.9	72.6	17.3	81.0	9.56	79	S.W.
May	...	...	146.6	Not exposed	90.2	73.1	17.1	81.3	4.98	78	S.W.
June	...	...	146.0	52.6	89.1	72.7	16.4	80.5	6.12	77	Calm
July	...	...	142.9	52.5	89.3	70.4	18.9	81.3	3.67	75	S.W.
August	...	...	144.1	52.7	88.1	72.1	16.0	79.7	6.70	80	Calm
September	...	...	145.1	52.5	88.8	72.1	16.7	81.0	3.68	77	S.W.
October	...	...	146.9	52.5	89.1	72.5	16.6	81.6	2.97	77	Calm
November	...	...	148.9	52.5	88.1	71.4	16.7	81.4	6.41	76	Calm
December	...	...	149.6	52.9	88.0	72.2	15.8	79.8	5.41	80	S.W.
Mean	145.6	52.5	89.0	71.9	17.1	80.8	7.03	78	S.W.	

* Total Rainfall 84.35 inches.

RETURN OF DISEASES AND DEATHS IN 1909 AT ALL HOSPITALS
IN SELANGOR:

Diseases.	* Remaining in Hospital at end of 1908.	Yearly Total.		† Total Cases Treated.	‡ Remaining in Hospital at end of 1909.
		Admis- sions.	Deaths.		
GENERAL DISEASES.					
Small-pox	4	3	...	7	
Chicken-pox ... ..	...	4	...	4	
Measles ... ..	...	3	...	3	
Typhus					
Dengue ... ..	...	4	...	4	
Influenza					
Plague					
Mumps ... ..	...	11	...	11	2
Diphtheria					
Febricula					
Enteric Fever	3	25	11	28	5
Cholérine ... ..	...	1	1	1	
Dysentery	58	983	381	1,041	64
Yellow Fever					
Beri-beri	349	1,706	398	2,055	305
Malarial Fever—					
Malignant Tertian	82	1,820	181	1,902	76
Benign Tertian	15	748	6	763	15
Malignant Tertian and Benign Tertian	...	16	2	16	
Quartan	6	237	...	243	17
Irregular... ..	6	...	2	6	
Type undiagnosed	54	2,387	79	2,441	46
Malarial Cachexia	6	101	18	107	6
Do. Coma ... ..	...	41	33	41	
Blackwater Fever ... ..	...	3	1	3	
Phagedæna—					
(a) Sloughing ... ..	...	41	15	41	6
(b) Hospital gangrene					
Erysipelas ... ..	...	20	2	20	1
Carried forward ...	583	8,154	1,130	8,737	543

* *i.e.*, the year previous to that for which the Return is made.

† “Total cases treated” will, of course, include those remaining in Hospital at the end of the previous year.

‡ The figures in this column to be carried on to the next year’s Return.

Diseases.	* Remaining in Hospital at end of 1908.	Yearly Total.		† Total Cases Treated.	‡ Remaining in Hospital at end of 1909.
		Admis- sions.	Deaths.		
<i>Brought forward</i> ...	583	8,154	1,130	8,737	543
GENERAL DISEASES—(cont.)					
Pyæmia	1	1	...	2	
Septicæmia ... ..	...	3	3	3	
Tetanus ... ..	...	3	3	3	
Tubercle	4	10	...	14	1
Leprosy—					
(<i>a</i>) Tubercular	196	303	45	499	223
(<i>b</i>) Anæsthetic					
Yaws					
Syphilis—					
(<i>a</i>) Primary	9	220	...	229	18
(<i>b</i>) Secondary	14	141	1	155	9
(<i>c</i>) Tertiary ... ..	...	195	21	195	
(<i>d</i>) Inherited	13	15	...	28	25
Gonorrhœa	7	251	...	258	16
Hydrophobia					
Scurvy					
Alcoholism ... ..	...	12	...	12	
Delirium Tremens ... ..	...	3	...	3	
Rheumatic Fever					
Rheumatism	22	657	3	679	32
Gout					
New Growths, non-malignant	1	23	2	24	
Do. malignant	1	33	16	34	
Rickets					
Anæmia	31	443	85	474	29
Myxœdema	1	...	...	1	1
Diabetes mellitus ... ..	...	10	1	10	1
Do. insipidus					
Debility	10	189	76	199	10
Other Diseases	2	22	14	24	1
<i>Carried forward</i> ...	895	10,688	1,400	11,583	909

* *i.e.*, the year previous to that for which the Return is made.

† "Total cases treated" will, of course, include those remaining in Hospital at the end of the previous year.

‡ The figures in this column to be carried on to the next year's Return.

Diseases.	* Remaining in Hospital at end of 1908.	Yearly Total.		† Total Cases Treated.	‡ Remaining in Hospital at end of 1909.
		Admis- sions.	Deaths.		
<i>Brought forward</i> ...	895	10,688	1,400	11,583	909
LOCAL DISEASES.					
NERVOUS SYSTEM.					
Sub-Section 1—					
Neuritis ...	...	24	...	24	3
Meningitis ...	...	8	4	8	
Myelitis ...	4	20	11	24	2
Hydrocephalus ...	...			
Encephalitis ...	...	1	1	1	
Abscess of brain ...	...	2	2	2	
Congestion of brain ...	...	1	1	1	
Sub-Section 2—					
Apoplexy ...	...	2	1	2	
Paralysis ...	19	15	2	34	9
Bed-sore ...	...			
Chorea ...	...			
Epilepsy ...	...	9	1	9	1
Neuralgia ...	...	27	...	27	1
Hysteria ...	...	2	...	2	
Sub-Section 3—					
Idiocy ...	...	2	...	2	1
Mania ...	31	48	13	79	27
Melancholia ...	49	72	21	121	39
Dementia ...	11	8	2	19	9
Delusional Insanity ...	...	10	...	10	
Other Diseases of the System ...	13	231	23	244	55
EYE.					
Conjunctiva—					
Conjunctivitis ...	4	68	1	72	3
Cornea—					
Keratitis ...	...	5	...	5	
Ulceration ...	8	57	1	65	8
Opacity ...	1	3	...	4	1
<i>Carried forward</i> ...	1,035	11,303	1,484	12,338	1,068

* *i.e.*, the year previous to that for which the Return is made.

† “Total cases treated” will, of course, include those remaining in Hospital at the end of the previous year.

‡ The figures in this column to be carried on to the next year’s Return.

Diseases.	* Remaining in Hospital at end of 1908.	Yearly Total.		† Total Cases Treated.	‡ Remaining in Hospital at end of 1909.
		Admis- sions.	Deaths.		
<i>Brought forward</i> ...	1,035	11,303	1,484	12,338	1,068
LOCAL DISEASES—(<i>cont.</i>)					
EYE—(<i>cont.</i>)					
Schlerotic—					
Staphyloma... ... ... ... ...	...	1	...	1	
Iris—					
Iritis 	3	17	...	20	5
Glaucoma 					
Hypopyon 					
Lens—					
Cataract 	11	21	1	32	17
Eyelids—					
Entropion ... ... ... ...	...	4	...	4	
Other Eye Diseases 	15	61	6	76	44
EAR.					
Inflammation ... ... ... ...	...	35	...	35	
Other Ear Diseases ... ... ... ...	...	10	4	10	
NOSE.					
Inflammation ... ... ... ...	...	1	...	1	1
Other Nose Diseases ... ... ... ...	...	7	...	7	1
CIRCULATORY SYSTEM.					
Membranes—					
Pericarditis 	1	6	5	7	
Endocarditis 					
Valvular Diseases 	5	63	31	68	2
Muscular Substance—					
Hypertrophy 					
Dilatation 	1	3	1	4	
Other Diseases of the System 	2	17	10	19	
RESPIRATORY SYSTEM.					
Larynx—					
Laryngitis ... ... ... ...	...	5	...	5	
<i>Carried forward</i> ...	1,073	11,554	1,542	12,627	1,138

* *i.e.*, the year previous to that for which the Return is made.
† “Total cases treated” will, of course, include those remaining in Hospital at the end of the previous year.
‡ The figures in this column to be carried on to the next year’s Return.

Diseases.	* Remaining in Hospital at end of 1908.	Yearly Total.		† Total Cases Treated.	‡ Remaining in Hospital at end of 1909.
		Admis- sions.	Deaths.		
<i>Brought forward</i> ...	1,073	11,554	1,542	12,627	1,138
LOCAL DISEASES—(<i>cont.</i>)					
RESPIRATORY SYSTEM—(<i>cont.</i>)					
Bronchi—					
Bronchitis	11	196	12	207	14
Asthma	8	46	2	54	5
Lung—					
Congestion					
Hæmoptysis	1	2	1	3	
Pneumonia	10	263	131	273	9
Gangrene ... ..	...	5	4	5	1
Phthisis	20	386	206	406	28
Emphysema					
Pleura—					
Pleurisy	1	53	10	54	1
Empyema	2	16	14	18	1
Other Diseases of the System ... ..	...	131	18	131	2
DIGESTIVE SYSTEM.					
Mouth—					
Stomatitis	1	17	3	18	
Dental Periostium—					
Gum-boil ... ..	...	11	...	11	1
Fauces—					
Tonsillitis ... ..	...	22	...	22	
Stomach—					
Gastritis ... ..	...	20	1	20	1
Dyspepsia	2	104	...	106	1
Intestines—					
Enteritis ... ..	...	15	10	15	1
Sprue ... ..	...	15	11	15	
Hernia	1	20	3	21	
Constipation ... ..	...	101	...	101	
Diarrhœa	20	694	121	714	24
<i>Carried forward</i> ...	1,150	13,671	2,089	14,821	1,227

* *i.e.*, the year previous to that for which the Return is made.

† “Total cases treated” will, of course, include those remaining in Hospital at the end of the previous year.

‡ The figures in this column to be carried on to the next year’s Return.

Diseases.	* Remaining in Hospital at end of 1908.	Yearly Total.		† Total Cases Treated.	‡ Remaining in Hospital at end of 1909.
		Admis- sions.	Deaths.		
<i>Brought forward</i> ...	1,150	13,671	2,089	14,821	1,227
LOCAL DISEASES—(<i>cont.</i>)					
DIGESTIVE SYSTEM—(<i>cont.</i>)					
Rectum and Anus—					
Hemorrhoids	1	43	...	44	2
Liver—					
Hepatitis	1	22	2	23	1
Abscess Liver ... ..	...	15	2	15	2
Cirrhosis	8	130	71	138	4
Congestion Liver ... ..	...	2	...	2	
Jaundice	1	19	6	20	
Peritoneum—					
Peritonitis ... ..	...	5	4	5	
Ascites ... ..	...	1	1	1	
Other Diseases of the System	3	145	20	148	4
LYMPHATIC SYSTEM.					
Spleen—					
Splenitis	4	264	3	268	8
Bubo	42	204	...	246	16
Lymphangitis ... ..	...	5	...	5	
Elephantiasis ... ..	...	2	...	2	
Other Diseases of the System ... ..	...	30	1	30	
URINARY SYSTEM.					
Kidney—					
Acute Nephritis	1	14	4	15	1
Bright's Disease	24	298	99	322	22
Hæmaturia					
Chyluria					
Bladder—					
Cystitis ... ..	...	18	1	18	
Calculus	2	4	...	6	
Other Diseases of the System	1	5	1	6	
<i>Carried forward</i> ...	1,238	14,897	2,304	16,135	1,287

* *i.e.*, the year previous to that for which the Return is made.

† "Total cases treated" will, of course, include those remaining in Hospital at the end of the previous year.

‡ The figures in this column to be carried on to the next year's Return.

Diseases.	* Remaining in Hospital at end of 1908.	Yearly Total.		† Total Cases Treated.	‡ Remaining in Hospital at end of 1909.
		Admis- sions.	Deaths.		
<i>Brought forward</i> ...	1,238	14,897	2,304	16,135	1,287
LOCAL DISEASES—(<i>cont.</i>)					
GENERATIVE SYSTEM.					
Urethra—					
Stricture	2	10	...	12	1
Prepuce—					
Phimosis	3	82	...	85	6
Paraphimosis ... ..	...	11	...	11	
Penis—					
Soft Chancre	40	196	...	236	6
Scrotum—					
Sloughing Scrotum ... ..	...	2	2	2	
Tunica Vaginalis—					
Hydrocele	1	15	...	16	
Testicle—					
Orchitis	1	24	...	25	1
Epididymitis ... ..	...	16	...	16	
Other Diseases (male)	1	34	...	35	4
Uterus—					
Metritis ... ..	...	3	...	3	1
Uterine Displacements ... ..	...	1	1	1	
Amenorrhœa ... ..	...			
Dysmenorrhœa ... ..	...			
Menorrhagia ... ..	...			
Leucorrhœa ... ..	...	1	...	1	
Other Diseases (female)	16	83	5	99	4
ORGANS OF LOCOMOTION.					
Bones—					
Periostitis	2	5	...	7	
Caries	1	16	4	17	
Necrosis	4	19	2	23	2
<i>Carried forward</i> ...	1,309	15,415	2,318	16,724	1,312

* *i.e.*, the year previous to that for which the Return is made.

† "Total cases treated" will, of course, include those remaining in Hospital at the end of the previous year.

‡ The figures in this column to be carried on to the next year's Return.

Diseases.	* Remaining in Hospital at end of 1908.	Yearly Total.		† Total Cases Treated.	‡ Remaining in Hospital at end of 1909.
		Admis- sions.	Deaths.		
<i>Brought forward</i> ...	1,309	15,415	2,318	16,724	1,312
LOCAL DISEASES—(<i>cont.</i>)					
ORGANS OF LOCOMOTION—(<i>cont.</i>)					
Joints—					
Synovitis	2	20	...	22	1
Ankylosis	1	...	...	1	
Spine—					
Caries Spine ... ..	...	4	3	4	
Curvature Spine					
Muscles—					
Myalgia ... ..	...	1	...	1	
Other Diseases	4	50	6	54	35
CONNECTIVE TISSUE.					
Cellulitis	1	42	5	43	5
Abscess	52	317	6	369	19
Gangrene ... ..	...	12	6	12	2
SKIN.					
Eczema	3	98	...	101	2
Psoriasis ... ..	...	1	...	1	
Herpes... ..	...	1	...	1	
Do. Zoster... ..	...	2	...	2	1
Ulcer	201	2,708	15	2,909	246
Boil	1	26	...	27	
Carbuncle	1	25	...	26	2
Onychia ... ..	...	4	...	4	
Whitlow ... ..	...	3	...	3	
Other Diseases	4	29	1	33	1
GENERAL INJURIES.					
Burns and Scalds	2	59	5	61	3
Sunstroke					
Multiple Injury	2	9	2	11	2
Starvation ... ..	...	10	6	10	
Shock					
<i>Carried forward</i> ...	1,583	18,836	2,373	20,419	1,631

* *i.e.*, the year previous to that for which the Return is made.

† "Total cases treated" will, of course, include those remaining in Hospital at the end of the previous year.

‡ The figures in this column to be carried on to the next year's Return.

Diseases.						* Remaining in Hospital at end of 1908.	Yearly Total.		† Total Cases Treated.	‡ Remaining in Hospital at end of 1909.
							Admis- sions.	Deaths.		
<i>Brought forward</i> ...						1,583	18,836	2,373	20,419	1,631
LOCAL INJURIES.										
Burns and Scalds	...	...	...	...	...
Wounds	...	...	...	...	...	39	642	5	681	35
Sprains	...	...	...	...	...	2	73	...	75	5
Dislocations	...	...	...	...	...	2	14	6	16	2
Fractures, simple	...	...	...	...	...	8	85	...	93	15
Do. compound...	...	...	...	...	...	7	47	8	54	3
Other Injuries	...	...	...	...	...	6	140	10	146	4
MALFORMATIONS	...	...	...	...	...	...	18	...	18	18
SURGICAL OPERATIONS.										
Major ...	...	...	...	...	...	4	{ 63§	{ ...	4	
Minor ...	...	...	...	...	...
MALINGERING	...	...	...	...	...	3	39	...	42	
POISONS.										
Mercury	...	...	...	...	...	...	5	2	5	
Alcohol	...	...	...	...	...	...	3	...	3	
Opium...	...	...	...	...	...	2	3	1	5	
Other Poisons...	...	...	...	...	...	...	45	1	45	
POISONED WOUNDS	...	...	...	...	...	4	27	2	31	2
PARASITES.										
Distomum Sinense	...	...	...	...	...	...	8	2	8	
Tœnia Solium...	...	...	...	...	...
Ascaris Lumbricoides	...	...	...	...	...	4	156	...	160	2
Ankylostomum Duodenale	...	...	...	...	...	89	490	64	579	16
Oxyuris Vermicularis	...	...	...	...	...	...	2	...	2	
Filaria Medinensis	...	...	...	...	...	...	6	...	6	
Acarus Scabiei	...	...	...	...	...	5	248	1	253	12
Tinea Circinata	...	...	...	...	...	...	8	...	8	1
Other Parasites	...	...	...	...	...	...	10	...	10	
UNDER OBSERVATION	...	...	...	...	...	55	171	...	226	10
TOTAL ...						1,813	21,076	2,475	22,889	1,756

* *i.e.*, the year previous to that for which the Return is made.

† "Total cases treated" will, of course, include those remaining in Hospital at the end of the previous year.

‡ The figures in this column to be carried on to the next year's Return.

§ These cases are already included under Diseases.

FEDERATED MALAY STATES.

STATE OF SELANGOR.

MEDICAL REPORT FOR THE YEAR 1909.

Speaking generally there has been a marked improvement in the health of the State during the year 1909. The total number of deaths registered shows a reduction of nearly 25 per cent. compared with 1908, and the total admissions to Government hospitals an almost identical reduction with a lessened case-mortality. In comparing the figures for the two years, it must, however, be borne in mind that the year 1908 was an exceptionally unhealthy one.

VITAL STATISTICS.

The following table shows the total births and deaths registered during the last five years with the approximate birth- and death-rates :

Year.	Estimated population.	Births.	Birth-rate per mille.	Deaths.	Death-rate per mille.
1905	252,502	2,857	11.31	6,756	26.75
1906	283,619	2,820	9.94	8,303	29.27
1907	326,642	3,188	9.75	10,177	31.15
1908	341,180	3,564	10.44	12,327	36.13
1909	354,982	3,981	11.21	9,306	26.21

The estimated population at the end of the year was 354,982, calculated as in previous years on the method laid down in the Model Medical Report. The next census will probably show the population to have been considerably over-estimated. Compared with 1908 there was an increase in the total number of births registered of 417. All the districts showed an increase except Ulu Selangor. The greatest increase was in the Klang district, and among Indians.

Three thousand and twenty-one fewer deaths were registered than in 1908. The reduction was marked in all districts except Kuala Langat, and among all nationalities except Eurasians.

The largest number of deaths was registered in the fourth quarter of the year.

METEOROLOGICAL CONDITIONS.

TEMPERATURE.—The mean temperature for the year varied only slightly in different districts, Ulu Langat showing the lowest, 80.1° F, and Kuala Selangor the highest, 82° F.

At Kuala Lumpur, the mean temperature for the year was 80.4° F, the mean maximum 89° F, and the mean minimum 71.9° F. The highest temperature recorded was 94° F on the 8th July, and the lowest, 66° F, on the 19th July.

RAINFALL.—Observations were recorded at twelve stations and showed considerable variations. The total rainfall for the year was highest at Kuala Kubu, where 132.51 inches were recorded, next coming Rawang 112.45 inches, Kajang 95.82 inches, Serendah 95.81 inches. At the General Hospital, Kuala Lumpur, and Klang, 84.35 inches and 84.10 inches, respectively, were recorded. At Kuala Lumpur the mean annual rainfall for the last thirty-one years works out to 95.37 inches, so that there the rainfall for 1909 was more than 10 inches below the average. At Kuala Kubu, on the contrary, the rainfall was well above the average. The monthly rainfall also showed considerable variations in different districts. March being the wettest month at Kuala Lumpur, Kajang and Rawang; February at Klang and Kuala Selangor; August at Kuala Kubu and Serendah; and November at Kuala Langat.

PATIENTS TREATED IN THE SELANGOR STATE HOSPITALS.

The comparative table below shows the number of in-patients treated in the Government hospitals for the last ten years :

Year.	Total treated.	Total deaths.	Percentage of deaths.
1900	17,963	2,419	13.43
1901	21,351	2,797	13.10
1902	18,175	2,087	11.48
1903	14,425	1,872	12.97
1904	14,319	1,534	10.71
1905	16,382	1,856	11.33
1906	18,963	2,428	12.80
1907	25,602	3,354	13.10
1908	30,287	4,286	14.15
1909	22,889	2,475	10.81

The falling off in the total treated for 1909 was partly due to the year having been a more healthy one, partly also to many of the estates now being provided with their own hospitals. I am unable to give any statistics of the latter as no returns are furnished me.

All the hospitals showed a decrease in the number of patients treated except the European Hospital, Kuala Lumpur, and the small district hospital at Sungei Besi. At the Klang, Kuala Lumpur, and Ulu Selangor district hospitals the decrease was most marked. The percentage of deaths to total treated was 10.81 compared with 14.15 in 1908.

The nationalities of the patients treated was as follows: Europeans, 191; Eurasians, 122; Chinese, 11,177; Tamils, 8,642; Malays, 900; other Nationalities, 1,857.

SPECIAL DISEASES.

No cases of cholera or plague were reported during the year. There were three admissions for small-pox, and a few cases of chicken-pox, measles, dengue, and mumps also came under notice. Twenty-five patients with enteric fever were admitted as against 28 in 1908.

PREVAILING DISEASES.

The following table shows the diseases more commonly treated with percentage of deaths during 1908 and 1909:

	No. treated.		No. of deaths.		Percentage of deaths.	
	1908.	1909.	1908.	1909.	1908.	1909.
Malarial fever	6,489	5,522	526	322	8.09	5.83
Beri-beri	3,462	2,055	762	398	22.01	19.36
Skin diseases	3,366	3,107	51	16	1.51	0.51
Dysentery	2,324	1,041	801	381	34.46	36.59
Diarrhœa	1,054	714	490	121	46.48	16.94
Venereal diseases	1,949	865	32	22	1.64	2.54
Pulmonary „	1,370	1,156	472	398	34.45	34.42
Injuries	1,167	1,169	49	42	4.19	3.59
Ankylostomiasis... ..	874	579	256	64	29.29	11.05
Rheumatism	694	679	7	3	1.00	0.44
Anæmia	639	474	120	85	18.77	17.72

MALARIA.—This disease was, as usual, by far the most important cause of sickness. The satisfactory decrease in the mortality from it, and in the total cases treated in the various hospitals as shown in the table below, coincides with the very great reduction in the general mortality from all causes mentioned under vital statistics:

Year.	Cases treated.		Deaths.		Mortality.	
1904	2,008	...	114	...	5.67	
1905	2,109	...	173	...	8.20	
1906	3,397	...	348	...	10.24	
1907	8,084	...	685	...	8.47	
1908	6,489	...	525	...	8.09	
1909	5,522	...	322	...	5.83	

At all the hospitals, except the European and the small district hospitals at Kuala Langat and Kajang, there was a marked reduction in the number of admissions for malaria. In the Kajang district a large amount of land is being opened up for rubber planting, and at present it is not so well supplied with estate hospitals as the Klang district.

As to the type of the disease, in 2,924 cases at the native hospitals in which a reliable microscopical identification of the parasite was made, the subtertian parasite was found in 67.3 per cent., while at the European Hospital it was only found in 20 out of 58 cases examined, or 34.4 per cent.; the remaining 38 cases all showing benign tertian parasites. The benign tertian parasite alone was found in 686 cases at the native hospitals, and the benign quartan in 265 cases. Of mixed infections, the subtertian and benign tertian forms were found in 82 cases, and benign tertian and quartan in three.

The reason why the subtertian form should be so much less common among Europeans has never yet been satisfactorily explained. It appears, however, to be a general rule. It is satisfactory to record that no deaths from malaria occurred at the European Hospital. Half ounce doses of Warburg's tincture three times daily was the favourite treatment there in severe cases as long as the fever lasted.

Although the hospital returns and deaths from malaria registered within the Sanitary Board limits appear to show that the total amount of malaria in Kuala Lumpur is less than in the previous year, the incidence of the disease in certain parts of the town continues to cause much uneasiness.

This has been more particularly the case in the European residential quarter, and especially in those areas reported on by a Commission appointed at the end of 1907 to investigate the growing prevalence of malaria among Europeans in Kuala Lumpur.

Reference was made to this Commission in my Annual Report for 1908, and to the inefficiency of the open rubble drains put down for dealing with the drainage of the numerous small gullies and valleys intersecting the hilly ground on which most of the European houses are situated. During the last three or four months of the year under review the outbreak of malaria assumed alarming proportions, especially among those occupying quarters situated in the General Hospital, Federal Hill, and Club Road areas, and few escaped an attack of fever. Further representations have been made on the subject, and it is hoped that more effective methods of drainage will shortly be undertaken.

At Petaling Hill some experimental work with subsoil drains has been done on a small scale, following the lines of the methods recently found effective in Panama. The chief difficulty at present is to get suitable drain pipes at a reasonable cost. In June I sent in a special report on certain swampy areas in Brickfields Road, adjoining the new quarters for European Railway employees, the new quarters for subordinate officers, and the Public Works Factory. Something was done here during the year in the way of drainage and filling in of swamps, and a considerable sum has since been voted for completing the work. The necessity for dealing with these areas was still further accentuated in December by the admission into the General Hospital from the Public Works Factory of a Tamil cooly suffering from blackwater fever, which proved fatal in two days. He was said to have come direct from India only twenty days before admission. He presented the classical symptoms of the disease, Hæmoglobinuria followed by suppression of urine, and subtertian malarial parasites were found in his blood on microscopical examination.

Three more cases of blackwater fever came under my notice during the year: all European planters from estates. Two were admitted to the European Hospital with a history of having lived in the East about two years, and having had a good deal of ordinary malaria for which they had dosed themselves freely with quinine. Both were mild cases and easily amenable to treatment. The third case, treated outside, was very severe in type and rapidly proved fatal.

To gain some idea of the amount of malaria in various parts of the Coast district, Dr. Gerrard made two spleen censuses of the children in the different schools. In April 2,001 children were examined and 203 found to have enlarged spleens, a percentage of 15.84. In August, of 1,146 children examined 143 had big spleens, a percentage of 12.48. He attributes the diminution at certain places in the August census partly to the effect of quinine distribution. Most of the schools examined are given in the table below, and, although the numbers are somewhat small, they afford a useful indication of the places where malaria is most prevalent. As was to be expected, Batu Tiga easily heads the list, while among the least malarious places appear to be Klang, Kapar, Telok, Bandar, and Telok Gadong. He draws special attention to Kuala Selangor, as not being so free from fever as has hitherto been imagined:

	April.			August.		
	Number of children examined.	Number with enlarged spleens.	Percentage with enlarged spleens.	Number of children examined.	Number with enlarged spleens.	Percentage with enlarged spleens.
Batu Tiga	12	7	58.03	6	6	100.00
Batu Blah	53	24	45.02	50	18	36.00
Pasangan	17	6	35.29	46	11	23.91
Batu Kamuning	37	12	32.43			
Bukit Rotan	39	9	23.07	54	17	31.48
Telok Menangoon	32	9	28.12	38	8	21.05
Kampong Nior	19	4	21.05			
Bukit Rajah	74	15	20.27	77	8	10.38
Kuala Selangor	49	9	18.36			
Jeram	50	10	20.00	40	8	20.00
Sementa	34	6	17.64	46	7	15.21
Tanjong Duablas	27	5	17.94	36	4	11.11
Port Swettenham (school)	32	5	15.62	17	4	23.52
„ (town)	313	39	12.46	253	16	6.32
Morib	33	5	15.15	39	7	17.94
Jeram, 20th mile	60	6	10.00	70	13	19.57
Permatang Pasir	36	4	11.11	40	7	17.50
Klang Tamil School	20	2	10.00	18	2	11.11
„ Anglo-Chinese School	60	6	10.00	53	1	1.88
„ Malay School	71	6	8.45	80	4	5.00
Telok	38	3	7.89	34	Nil	Nil
Kapar	36	2	5.55	35	„	„
Bandar	39	2	5.12	42	„	„
Telok Gadong	39	2	5.12	44	1	2.27

At Port Swettenham another spleen census of all the schoolchildren under 10 years of age was carried out in December by Dr. Millard, with the result that only 8.2 per cent. were found with enlarged spleens, and within the bunded area only 6.9 per cent.

To still further test the amount of malaria at Port Swettenham he drew up the attached chart* of all malarial fever cases admitted from Port Swettenham to Klang hospital, month by month, for the last three years. The chart clearly shows that in the last three or four months of each year there was a rise in the amount of malaria. This autumnal increase appears to be a pretty general one throughout this part of the tropics.

A large amount of money was spent at Port Swettenham on anti-malarial measures during the year. The Railway and Public Works Departments alone spent over \$20,000 on drainage and filling in of swamps. Out of Sanitary Board votes between \$2,000 and \$3,000 was spent in upkeep of drains, Government grounds, and on scavenging. In addition, there was some minor expenditure in free distribution of quinine and kerosening undrained or undrainable ponds. Towards the end of October considerable damage was done to the present bunds by unusually high tides, which are reported to have been about two feet higher than anything previously recorded. The damage done has since been rectified, and a scheme is now being put forward for increasing the bunded area.

At Klang \$4,674 were spent in drainage and filling in of swamps, and the town itself is said to be almost free from malaria. Nearly \$5,000 were spent on the Bukit Rajah anti-malarial scheme. It consisted chiefly in deepening and regrading about two miles of the main drain along the Sungei Binjai road, one of the main roads leading out of Klang, and in improving the subsidiary drainage.

BERI-BERI.—The table below gives the statistics of this disease in the State hospitals for the last ten years :

Year.	Total treated.				Total deaths.				Percentage of deaths.
1900	2,428	...	390	...	16.01
1901	2,065	...	311	...	15.06
1902	2,673	...	325	...	12.15
1903	1,912	...	351	...	18.35
1904	2,083	...	326	...	15.65
1905	2,215	...	330	...	14.89
1906	1,896	...	365	...	19.25
1907	1,887	...	374	...	19.81
1908	3,462	...	762	...	22.01
1909	2,055	...	398	...	19.36

From this it will be seen that although the total number of patients treated during 1909 is 1,407 fewer, and the mortality slightly less than in the previous year, there is no marked improvement when the figures of a series of years are examined.

The explanation is that nearly all the beri-beri patients are Chinese, who also form about half the admission from all causes to the hospitals.

Until this section of the community can be induced to give up the use of Siam rice, beri-beri will continue to form one of the chief prevailing diseases.

The estates in Selangor employing Tamil labour use parboiled rice, and are practically free from beri-beri.

One Chinese-owned estate, employing Chinese labourers, fed on Siam rice, had several beri-beri patients in the estate hospital when visited by me.

The following comparative table shows the number of beri-beri patients treated in each hospital, with the mortality for the last two years :

	Total treated for beri-beri.		Total deaths.		Percentage of deaths.	
	1909.	1908.	1909.	1908.	1909.	1908.
European Hospital, K. Lumpur ...	1					
General " " ...	69	118	11	5	15.94	4.23
Lunatic Asylum " " ...	...	16	...	5	...	31.25
Gaol Hospital " " ...	1	25	1	...	100.00	
District Hospital " " ...	1,148	1,890	283	468	24.65	24.76
Vagrant Ward " " ...	40	23	7	1	17.50	4.34
District Hospital, S. Besi... ..	132	140	9	36	6.81	25.71
" Klang	111	173	17	34	15.31	19.65
" K. Langat	39	58	3	8	7.66	13.79
" K. Selangor	23	8	2	2	8.70	25.00
Beri-beri Hospital, Jeram	47	118	1	6	2.12	5.08
District Hospital, Kajang	130	183	20	57	15.38	31.14
" K. Kubu	118	253	28	94	23.72	37.15
" Serendah	104	194	17	38	16.46	19.58
" Rawang	92	263	2	8	2.17	3.04

* Not printed.

It will be seen that the diminution in the number treated and in the mortality from beri-beri was well marked at nearly all the hospitals.

The case at the European Hospital was the first admitted there since the opening of the hospital in February, 1904.

No cases at all occurred in the asylum, where parboiled rice has been supplied to the inmates since July, 1908. The only case in the gaol was a Chinaman who was admitted to the prison suffering from the disease in an acute form, and who died a few hours after admission. As in the previous year there was not a single case of beri-beri contracted in the gaol throughout the year, and the use of Rangoon (uncured) rice in the prison diets was continued.

At the District Hospital, Kuala Lumpur, Rangoon rice was used throughout the year for all Chinese patients.

At the other hospitals parboiled rice was mostly used in the diets of beri-beri patients.

New diet scales for hospitals were drawn up by a Committee appointed for the purpose, and parboiled (cured) rice will in future be the only form of rice used in the hospitals.

The seaside beri-beri hospital at Jeram was closed at the end of June, as it was rapidly becoming uninhabitable owing to the sea encroaching and flooding the wards during high tides.

As bearing on the connection between rice and beri-beri it is worth recording that in April an outbreak of beri-beri commenced among about a hundred Malays recently enlisted into the Police Force, and stationed in barracks at the Police Dépôt, Kuala Lumpur. From the reports made by Dr. Gimlette, who was then in charge at the General Hospital, and to whom I am indebted for a careful clinical examination and notes on each case, it appears that on the 24th April 19 men, all Malays except one Javanese, were found to be suffering with symptoms of the disease in an early stage. The rice they had been using was found to be No. 2 Siam, and it appeared that for some months cases of beri-beri had occurred from time to time among the Malays at the Dépôt. Acting on my suggestion, parboiled rice was at once substituted for Siamese in their diets.

Five more cases occurred in April, and one in May, making a total of 25 cases, all of whom eventually recovered. The May case turned out to have been a married man living, not in the barracks, but in the married quarters with his wife and family, and who had continued to eat Siamese rice, although advised not to do so. By June the health of the Malays at the Dépôt had much improved, and the occurrence of any further cases of the disease ceased. The Siam rice used by the Malays at the time of this outbreak was among the rices employed by Drs. Fraser and Stanton at the Institute in their feeding experiments on fowls. All their researches on the etiology of beri-beri so far appear to amply confirm the truth of Dr. Braddon's contention that beri-beri out here is connected with the consumption of certain forms of rice, and may be prevented by the use of parboiled rice.

Their recent work also appears to explain why certain rices produce beri-beri and others do not, and incidently why the prisoners in the gaol fed on Rangoon (an uncured) rice have been comparatively free from the disease for several years.

DYSENTERY AND DIARRHŒA.—The hospital statistics showed a great reduction in the number of cases treated with a lessened mortality in these two diseases, which, as usual, come next to malaria and beri-beri as the most important causes of sickness and death. At the District Hospital, Kuala Lumpur, Dr. McClosky reports that out of 401 admissions for dysentery the excreta was examined in all cases for amœbæ, and in only 14 were they found. This is contrary to the experience at the Tan Tock Seng Hospital in Singapore, where the large majority of the cases are said to be of amœbic origin. In 15 cases in which he found amœbæ, anti-dysenteric serum was used, and out of these six died. The difficulty he experiences in testing the serum treatment is to find sufficiently early and suitable cases.

ANKYLOSTOMIASIS.—The admissions into all the Government hospitals for this disease were only 490 as compared with 833 in 1908, and the percentage of deaths to total treated 11.05 as against 29.29 per cent. At Klang hospital, where the admissions fell from 1,414 in 1908 to 176 in 1909, and the mortality from 37.34 to 20.4 per cent., Dr. Millard attributes the diminution partly to fewer estate coolies coming for treatment owing to the establishment of estate hospitals.

Another reason may be the greater care taken by Medical Officers before returning a patient as suffering from ankylostomiasis merely because a few ova happen to be found in the stools. For instance, in reporting on the District Hospital, Kuala Lumpur, Dr. McClosky writes:

“The ova of ankylostoma were found in 415 patients, but only 60 were returned.” At Kuala Kubu Hospital Dr. Harrison examined the fæces of 1,441 patients, out of a total of 1,657 treated in the hospital, and found the ova of ankylostoma present in 45.38 per cent. In 195 cases only was the disease returned as ankylostomiasis.

In his report on the disease, which I attach in full as an appendix, he says: “It will be seen that the Malays, including Javanese, as in my former report, head the list as regards infection with ankylostoma, and of 129 cases examined 92 were infected, or a case-percentage of 71.31 as compared with 57.69 in 1908. The Tamils come next with a percentage of 51.05 as compared with 52.41. Other Indians follow with a percentage of 39.34 as compared with 32; Chinese show a percentage of 36 as compared with 38.05.”

In a series of examinations made by Dr. Stanton among Tamil coolies employed on estates the proportion of infected persons varied from 25 per cent. on a healthy estate to 56 per cent. in the case of patients admitted to an estate hospital.

That a large proportion of the population harbour the parasites without themselves suffering from the effects has been known here for years. The modern view is to regard such people as carriers of the disease, who although immune themselves, are none the less a danger to others, especially to those whose resisting powers happen to be lowered by malaria or other causes. The chief preventive measures recommended are general sanitary ones which have to do with water supply and the prevention of faecal contamination of the soil. Within the Sanitary Board limits of the towns and larger villages powers already exist for enforcing such.

On estates more attention has been paid to water supply during the year, but so far no legislative action has been taken with regard to the provision of latrine accommodation. Except in the case of estate hospitals, latrines for the coolies are non-existent on Selangor estates.

PULMONARY DISEASES.—There was a slight reduction in the total treated while the percentage of deaths remained about the same. The number of admissions for phthisis was 386, and for pneumonia 263, as against 404 and 303, respectively, in 1908. Most of the phthisis cases were, as usual, centralized at the District Hospital, Kuala Lumpur, where there is a special ward set apart.

VACCINATION.—The total number of persons vaccinated was 10,522. As usual, more than half were Tamils, and most of them coolies for various estates who were dealt with on arrival at Port Swettenham, and about whom no information was obtainable afterwards as to the success of the operation. Of 5,868 persons who were seen afterwards, the vaccination was perfect in 4,965, or over 84 per cent., modified in 611, and in 292 it failed.

Saigon lymph has been used here for many years and so far no other lymph has been found to equal it. In September, Dr. Wellington, the Health Officer, tried three varieties of lymph sent from England on 63 people, of whom only two gave a positive result. Of 39 children who failed, 35 were re-vaccinated with fresh Saigon lymph, with the result that 31 reacted satisfactorily. The vaccinations were performed at intervals of four to 19 days after the receipt of the lymph from home, and he concludes that by the time it reaches here, glycerinated lymph has no merit whatever, and the dried variety very little. The lanolinized was inert 18 days after arrival.

OUT-DOOR DEPARTMENT.—The number of out-door patients treated during the last five years is given in the table below. Compared with 1908 the figures for the present year show a considerable decrease, but not so marked as in the case of the in-patients:

Year.	Out-patients.								
1905	41,558
1906	42,536
1907	59,613
1908	70,215
1909	63,296

From the 24th June to the end of the year weekly visits were paid by Dressers told off for the purpose to the large mining villages of Ampang and Kepong. At the former place 1,278 patients applied for treatment, but at the latter only 56.

Jeram was also visited once a week, after the beri-beri hospital was closed, by a Dresser from Kuala Selangor, but only 35 patients applied for treatment in six months.

STATISTICS AND SPECIAL DETAILS OF INDIVIDUAL HOSPITALS.

European Hospital, Kuala Lumpur.

					1908.		1909.
Number of in-patients	...	...	...	...	169	...	170
„ deaths	...	...	...	...	3	...	2
Percentage of deaths	...	...	...	...	1.24	...	1.17
Average daily number of sick	...	...	...	...	7.36	...	7.08

The two deaths were due to tetanus following a compound fracture of the fore-arm, and suppurative appendicitis with a gangrenous appendix.

Fever accounted for 73 of the cases treated. Thirty-eight were benign tertian, 20 sub-tertian, 13 type undiagnosed, and two blackwater fever.

Nine major and 16 minor operations were performed.

Three cases of abscess of liver were operated on without a death. One case was of special interest. The patient, a Planter, had lived in the east for 23 years. Five years ago he had dysentery, and since then he has been operated upon for liver abscess in this hospital on three occasions, in December, 1906, 1907 and 1909, respectively. He has again resumed his ordinary work on the estate.

Five cases of appendicitis were operated upon. One, as mentioned above, proved fatal, the other four were all quiescent cases and made uninterrupted recoveries.

The Nurses occupied their new quarters on the 29th August.

The maternity ward, containing two rooms, was completed and ready for occupation by the end of the year.

General Hospital, Kuala Lumpur.

	1909.	1908.
Number of in-patients	3,788	4,697
„ deaths	212	279
Percentage of deaths	5.59	5.96
Average daily number of sick		
} Males	112.90	127.64
} Females	51.09	61.31
Number of major operations	16	20
„ minor „	217	463
Admissions to maternity ward	16	30
Out-patients	19,812	20,267

The wooden floor of the old surgical ward was removed, and a concrete floor substituted with a tiled dado. Some minor improvements were also effected in the operation room and maternity ward. A new police ward of 40 beds was completed, and police-constables will now be treated here instead of in the police ward at the Dépôt.

The verandah near operation room where out-patients are dressed was widened by 10 feet.

One hundred and forty-six autopsies were performed during the year, the majority being for medico-legal purposes on bodies brought by the Police.

Police Ward, Police Dépôt.

	1909.	1908.
Number of in-patients	580	795
„ deaths	6	3
Percentage of deaths	1.03	.37
Average daily number of sick	19.19	17.91
Number of out-patients	6,325	5,681

The six deaths were due to enteric fever 2, beri-beri 1, pericarditis 1, pneumonia 1, and peritonitis 1.

Two hundred and forty-eight cases of malarial fever were treated as compared with 336 in 1908. There were no deaths from this disease.

Lunatic Asylum, Kuala Lumpur.

	1909.	1908.
Total treated	230	230
Number of deaths	37	52
Percentage of deaths	16.08	22.60
Average daily number	84.61	85.08
Discharged	114	84

The nationalities of those under treatment comprised Chinese 157, Tamils 42, Malays 12, Javanese 9, Bengalis 4, Japanese 3, European, Cingalese, and Boyanese each 1.

Gaol Hospital.

	1909.	1908.
Total treated in the hospital	1,244	1,284
Number of deaths	4	6
Percentage of deaths ... ..	.32	.46
Average daily number of sick	37.58	39.13

The percentage of deaths to total treated was smaller even than that of the previous year, and the lowest so far recorded.

The four deaths were due to dysentery 2, pneumonia 1, beri-beri 1. The beri-beri case has already been referred to.

The principal diseases were: malarial fever 232 cases, dysentery 46 cases, wounds and ulcers 218, diseases of the digestive system 122.

The great bulk of the wounds were self-inflicted and wilfully aggravated to gain admission into hospital and thus avoid hard labour.

Of the dysentery cases the majority came to prison with the disease, but in the beginning of December 12 prisoners appeared to have contracted it in the gaol. The prompt action of the prison authorities quickly arrested any outbreak. The chief measures taken were isolation of all dysentery cases in the extra-mural ward, disinfection of cells, clothing, plates and cups which had been used by the sick, and the careful carrying out of the rule that all prisoners should be provided with weak tea to drink, and not with unboiled water.

District Hospital, Kuala Lumpur.

	1909.	1908.
Total in-patients treated	6,776.	8,937.
„ deaths	1,062.	1,578.
Percentage of deaths	15.67	17.65
Average daily number of sick	566.41	625.93
Number of out-patients	7,795.	8,552.

Malarial fever accounted for 1,146 admissions; next in order coming beri-beri 915, ulcers 815, dysentery and diarrhoea 568.

The nationalities of the in-patients were: Chinese 4,544. Tamils 1,937, Bengalis 144, Malays 131, Singalese 15, Eurasians 4, Javanese 1.

One hundred and twenty-five estate coolies were admitted during the year, of whom 21 died, the deaths being due to dysentery 10, malaria 7, ankylostomiasis 1, pneumonia 1, Brights disease 1, myelitis 1.

A large amount of operative surgery was done at this hospital including 35 major operations.

One hundred and twenty-eight patients were admitted from the Tung Shin Hospital, a private hospital managed by Chinese. Many of them were in a hopeless condition and 44 died. Sixty-eight of the patients were suffering from beri-beri.

Three hundred and eighty-six autopsies were performed during the year.

Leper Hospital.

The admissions numbered 93, total treated 289, and percentage of deaths 15.22 per cent. as against 130, 298, and 16.44 per cent., respectively, in 1908. The average daily number was 209.24 as against 180.08. Owing chiefly to the employment of two extra watchmen only 22 absconded as against 42 in the previous year.

It is most desirable this hospital be removed from the neighbourhood of Kuala Lumpur to Pulau Jerejah or some other island, where the facilities for absconding would be reduced to a minimum, and where it would be possible to allow the inmates to engage in various occupations without danger to others, and to ameliorate the sad conditions under which they now exist.

Vagrant Ward.

Two hundred and sixteen Chinese and 48 Tamils were admitted during the year. Of a total of 315 under treatment, 238 were discharged, four transferred, four absconded, 17 died, and 52 remained at the end of the year. Seven of the deaths were due to beri-beri.

Klang Hospital.

	1909.	1908.
Total in-patients treated	3,035	5,097
„ deaths	303	866
Percentage of deaths	9.98	16.99
Average daily number of sick	160.05	274.61
Number of major operations	17	12
„ minor „	108	81
„ out-patients	8,508	6,705

Malarial fever accounted for 766 of the total treated; next in order coming fever (type not diagnosed) 259, ankylostomiasis 196, dysentery 121, beri-beri 111, diarrhoea 59.

During the year 113 autopsies were made and 5,162 microscopical examinations.

Among new works completed were a new ward of 40 beds, a bath-room, a new main drain, and a fence around the hospital grounds. The levelling of the top of the hill, and a new kitchen will soon be completed.

Kuala Selangor Hospital.

	1909.	1908.
Total in-patients treated	504	847
„ deaths	37	133
Percentage of deaths	7.34	15.07
Average daily number of sick	36	55.05
Number of out-patients	743	963

During the year a new ward for 34 patients and new Dresser's quarters were built. When the Jeram beri-beri hospital was closed the patients were transferred here at first, and later a portion of them to Jugra Hospital.

Jugra Hospital.

	1909.	1908.
Total in-patients treated	615	805
„ deaths	23	68
Percentage of deaths	3.73	8.44
Average daily number of sick	26.81	32.38
Number of out-patients	1,291	1,597

A new ward was completed at this hospital. In order to try and induce Malays to come into hospital more freely, it was for the first two or three months set apart entirely for their use and the fact made known in the district. As only one or two availed themselves of the opportunity the ward was afterwards used to relieve the Kuala Selangor Hospital, which was overcrowded owing to the Jeram beri-beri patients having been transferred there.

Kuala Kubu Hospital.

	1909.	1908.
Total in-patients treated	1,657	2,144
„ deaths	253	429
Percentage of deaths	15.26	20.01
Average daily number of sick	99.25	101.18
Number of out-patients	2,523	6,849

Serendak Hospital.

	1909.	1908.
Total in-patients treated	904	1,273
„ deaths	132	209
Percentage of deaths	14.60	16.41
Average daily number of sick	71.14	84.10
Number of out-patients	3,154	3,383

Rawang Hospital.

	1909.	1908.
Total in-patients treated	1,088	1,483
„ deaths	63	102
Percentage of deaths	5.79	6.87
Average daily number of sick	67.89	76.38
Number of out-patients	2,617	3,512

The above three hospitals, situated in the Ulu Selangor district, all show a decrease in the number of patients treated, and also a decrease in the percentage of deaths. Malarial fever, beri-beri, dysentery, ankylostomiasis, diarrhoea, and dysentery were the chief causes of admission in the order named.

Kajang District Hospital.

	1909.	1908.
Total number of in-patients	1,555	1,822
„ deaths	207	357
Percentage of deaths	13.31	19.59
Average daily number of sick	91.74	94.13
Out-patients	4,026	3,663

A separate female ward was completed in August. Up to the end of the year 24 females were admitted, all Tamils except one Chinese and one Malay.

Sungei Besi District Hospital.

	1909.	1908.
Total number of in-patients	477	360
„ deaths	62	83
Percentage of deaths	13.01	23.05
Average daily number of sick	25.94	19.41
Out-patients	2,261	1,844

The closing of some of the mines in this district probably accounts for the increase in the number of patients seeking admission. Of the total patients treated 451 were Chinese.

Veterinary.

As usual, a great deal of valuable work was done by this department under the charge of the Veterinary Surgeon, Mr. T. A. Ford, from whose report I extract the following details.

Rinderpest.

There were seven outbreaks during the year: three at Port Swettenham Quarantine Station, two at Klang, and one at Port Swettenham town. In four the infection was directly traced to cattle brought from Penang, in one the infection was probably due to infection on board the ship bringing the cattle from India, and in two the source could not be traced. Seventy-nine cases occurred with a total of 59 deaths. Of 159 animals inoculated with anti-rinderpest serum 17 died.

Foot-and-Mouth Disease.

There were 1,453 cases with 11 deaths. The first cases were two bullocks imported in January from Penang and who developed the disease at the Quarantine Station, Port Swettenham. In February the disease broke out in Klang, and from there spread to other districts in the State.

Eight sporadic cases of septicæmia hæmorrhagica occurred in January and February among bullocks belonging to Chinese and Tamils in Kuala Lumpur. All died within a few hours of being taken ill.

No cases of rabies, glanders, anthrax, surra, or swine fever were reported. A few cases of distemper in the dog were seen.

The Quarantine Station at Port Swettenham was extensively used during the year; altogether, 1,958 cattle and 885 buffaloes being quarantined there. Thirty-nine of the bullocks and 24 of the buffaloes died, mostly from rinderpest and enteritis. At Bukit Sintul Station 278 bullocks and 393 buffaloes were quarantined, 10 of whom died, five from rinderpest. This station was of much use in relieving the Port Swettenham one.

The Kuala Kubu Station was completed early in the year, and was used for isolating foot-and-mouth disease cases and contacts during the outbreak in Ulu Selangor from June to October.

A grand total of 15,387 animals were inspected on arrival in the State. Of these, 14,978 (cattle 2,305, buffaloes 885, horses 128, pigs 5,852, sheep 5,792, dogs 16) were imported at Port Swettenham.

During the year 422 prosecutions were instituted for cruelty to animals and breaches of quarantine regulations, 374 convictions being obtained, and fines amounting to \$4,883 imposed.

Other duties carried out by this department have been in connection with slaughter-houses, visiting and treating Government-owned cattle, inquiries into deaths of animals, visits to station pounds and out-stations.

From the 22nd April to 1st May, and again from the 20th June to 13th August, Mr. Ford was away in Pahang on special duty in connection with outbreaks of rinderpest and swine fever in the Kuantan district.

EXAMINATION OF PETROLEUM.

One million four hundred and ninety-nine thousand nine hundred and thirty-six gallons of petroleum were imported at Port Swettenham. The flash point was tested in 84 samples.

CHANGES IN THE STAFF.

I took over charge as Senior Medical Officer on the 3rd February.

Dr. Gimlette was in charge of the General Hospital until the 25th October, when he was appointed State Surgeon, Kelantan, Dr. Cooper relieving him here.

Dr. Gerrard went on leave on the 26th November, and Dr. Millard was appointed to act at Klang in charge of the Coast districts.

Dr. Masters was appointed House Surgeon in place of Dr. Niven, who resigned the service on the 25th July.

In the nursing there have been a number of changes; Miss Reeve was appointed Nurse-Matron at the General Hospital in place of Miss Meany who resigned on the 19th April.

Miss Houghton was appointed Matron at the European Hospital in place of Miss Jenkins, who resigned the service on the 18th November.

Miss Banister-Jones resigned the service on the 15th September, and Miss McBride was appointed in her place.

A new Assistant Surgeon, Mr. Ponniah, arrived from India in April and was given duty at the General Hospital, Kuala Lumpur.

A new Veterinary Inspector, Mr. Rebello, arrived from India on the 23rd July, and has been detailed for duty at the Sanitary Board cattle-sheds.

The following returns accompany this report:

- (a) Model Medical Report for 1909;
- (b) Return of patients treated in all hospitals during 1909;*
- (c) Vaccination return for the year 1909;*
- (d) A report by Dr. Harrison, Medical Officer, Ulu Selangor, on ankylostomiasis, as an appendix.*

G. D. FREER,
Senior Medical Officer, Selangor.

* Not printed.

